

FEB 24 2010

Application Serial No. 10/798,001  
Response to Office Action dated September 30, 2009

Docket: CU-3633  
Patent

**AMENDMENT****Amendments to the Claims**

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

Applicant wishes to make the following amendments to the claims of the above patent application:

**Listing of Claims:**

1-21. (canceled)

22. (withdrawn) A bio-microarray device comprising:

a substrate is selected from the group consisting of a metal, a semiconductor, a glass, a polymer material and admixtures thereof;

an anti-reflection layer formed on the surface of the substrate wherein the anti-reflection layer comprising fine particles coated with a polymer resin material selected from the group consisting of meta-acrylic-based resins, styrene-based resins, cycloolefin-based resins, polyester resins, polycarbonate resins, polydiallyldimethylammonium resin, a crosslinked polyallylamine polyacrylic resin and admixtures thereof, wherein the anti-reflection layer has a fine uneven structure comprising a fine particle of diameter in a range of 50 nm to 300 nm; and

an immobilization layer comprising a thin film of poly-L-lysine formed in a pattern for immobilizing a probe biomolecule thereon.

23. (withdrawn) The bio-microarray device of claim 22 wherein the fine particles are selected from the group consisting of inorganic material consisting of  $\text{MgF}_2$ ,  $\text{SiO}_2$ ,  $\text{AlF}_3$ ,  $\text{CaF}_2$ ,  $\text{LiF}$ ,  $\text{NaF}$ ,  $\text{ThF}_4$  and admixtures thereof.

24. (withdrawn) The bio-microarray device of claim 22 wherein the fine particles are selected from the group consisting of organic material consisting of crosslinked acrylic fine particles, uncrosslinked acrylic fine particles, crosslinked polystyrene fine particles, uncrosslinked polystyrene fine particles, monodisperse polymethyl methacrylate fine particles and admixtures thereof.

25. (withdrawn) The bio-microarray device of claim 22 wherein the anti-reflection layer is a laminate composed of alternating layers of polyallylamine and polyacrylic.

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26. (currently amended) A substrate for bio-microarray comprising:

a substrate;

an anti-reflection layer is formed on one ~~[[the]]~~ surface of the substrate; and

an immobilization layer for immobilizing a probe biomolecule formed in a pattern on the surface of the anti-reflection layer, wherein a back side anti-reflection layer or a back side light-absorbing layer is formed on the other surface of the substrate, and

wherein the anti-reflection layer is formed only in a region in which the immobilization layer is formed.

27. (withdrawn) A substrate for bio-microarray comprising:

a substrate;

an anti-reflection layer formed on the surface of the substrate; and

an immobilization layer for immobilizing a probe biomolecule formed in a pattern on the surface of the substrate, wherein the anti-reflection layer is formed only in a region other than a region in which the immobilization layer is formed.

28. (previously presented) The substrate for bio-microarray according to claim 26, wherein the anti-reflection layer has a fine uneven structure comprising a fine particle of diameter in a range of 50nm to 300nm; and

further wherein a bulk refractive index of the fine particle is smaller than that of the substrate.

29. (withdrawn) The substrate for bio-microarray of claim 27, wherein the anti-reflection layer has a fine uneven structure comprising a fine particle of diameter in a range of 50nm to 300nm; and

further wherein a bulk refractive index of the fine particle is smaller than that of the substrate.

30. (previously presented) The substrate for bio-microarray of claim 26, wherein the anti-reflection layer has a fine uneven structure with a depth in a range of 80nm to 250nm; and

further wherein a refractive index of the anti-reflection layer is smaller than that of the substrate.

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31. (withdrawn) The substrate for bio-microarray according to claim 27, wherein the anti-reflection layer has a fine uneven structure with a depth in a range of 80nm to 250nm; and

further wherein a refractive index of the anti-reflection layer is smaller than that of the substrate.

32. (previously presented) The substrate for bio-microarray according to claim 26, wherein the anti-reflection layer has a fine porous structure; and

further wherein a refractive index of the anti-reflection layer is smaller than that of the substrate.

33. (withdrawn) The substrate for bio-microarray according to claim 27, wherein the anti-reflection layer has a fine porous structure; and

further wherein a refractive index of the anti-reflection layer is smaller than that of the substrate..

34. (previously presented) The substrate for bio-microarray according to claim 26 further comprising a mark formed on the substrate for positional detection.

35. (withdrawn) The substrate for bio-microarray according to claim 27 further comprising a mark formed on the substrate for positional detection.

36. (previously presented) A bio-microarray comprising the substrate for bio-microarray of claim 26 and the probe biomolecule immobilized on the immobilization layer of the substrate.

37. (withdrawn) A bio-microarray comprising the substrate for bio-microarray of claim 27 and the probe biomolecule immobilized on the immobilization layer of the substrate.

38. (withdrawn) The substrate for bio-microarray according to claim 27 further comprising a reflection layer between the substrate and the immobilization layer.

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39. (new) The substrate for bio-microarray according to claim 26, wherein the back side anti-reflection layer or the back side light-absorbing layer is formed in a pattern only in a region in which the immobilization layer is formed.